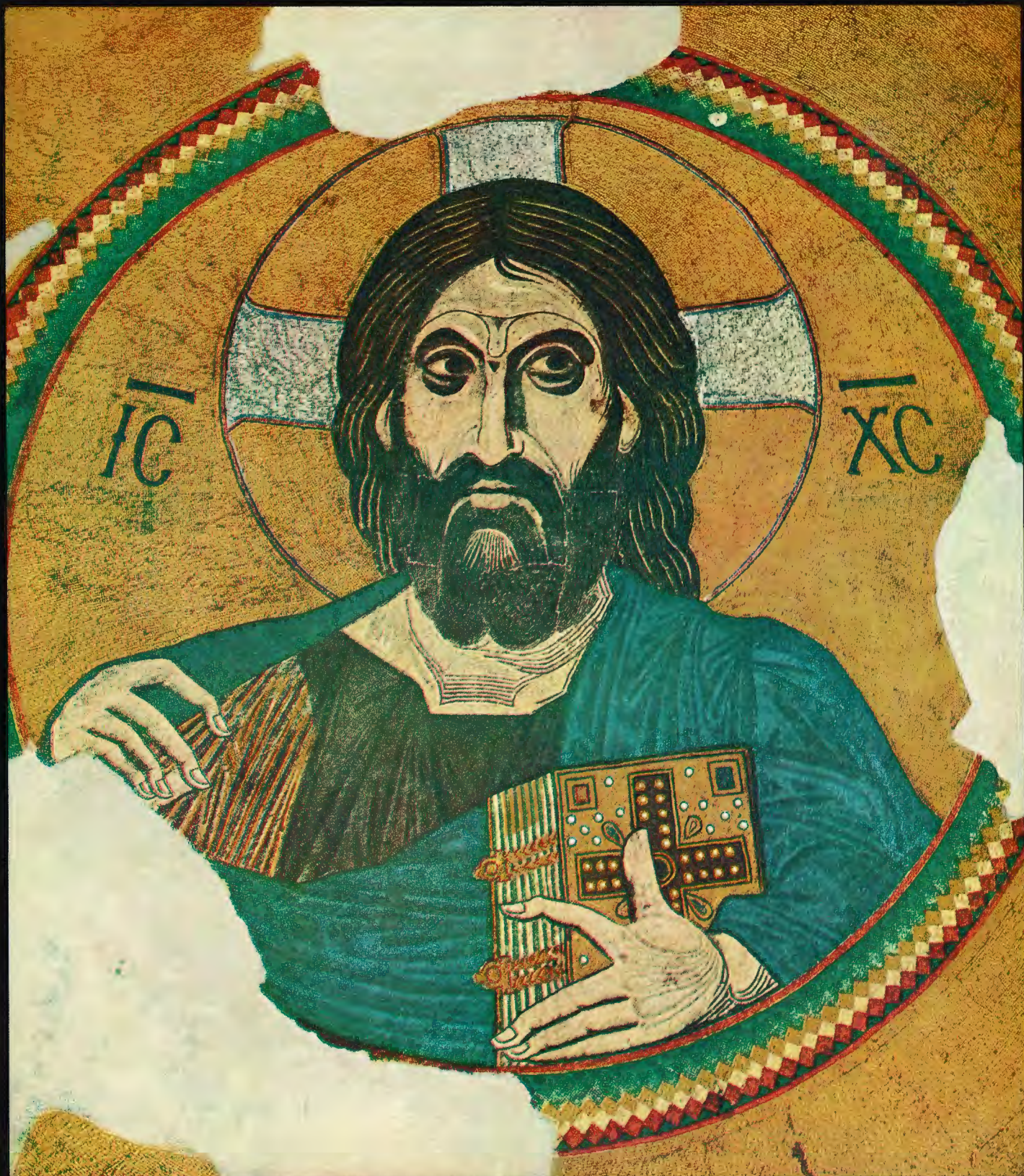




Magazine

DECEMBER
1960



The *ICI Magazine*, price twopence, is published for the interest of all who work in ICI and its contents are contributed largely by people in ICI. Edited by Sir Richard Keane, Bt., and printed at The Kynoch Press, Birmingham, it is published every month by Imperial Chemical Industries Limited, Imperial Chemical House, Millbank, London, S.W.1 (Phone: VICTORIA 4444). The editor is glad to consider articles and photographs for publication, and payment will be made for those accepted.

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The I C I Magazine

DECEMBER 1960

Contributors



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John Beckett is in the Home Sales Department of Salt Division. During the war he served in the Indian Army in the Far East and afterwards was recalled for service in Korea. Outside the Company he enjoys trout fishing and oil painting.



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Contents

Economics and Christmas, by Mark Abrams	399
Britain's Only Salt Mine, by J. A. Beckett	400
News in Pictures	406
Fiftieth Central Council	410
People and Events	416
Madonna of the Mountains, by Joanna Le Fevre	420
Copper Coins of the Industrial Revolution, by D. W. Evans	422
A Christmas Fiver, by J. S. P. Agg Large	426
Bobby Neill hits out at Training Methods, by Denis Batchelor	428

FRONT COVER: Christ Pantocrator, a twelfth-century mosaic in the centre of the dome of the Byzantine Church of Daphni in Greece. For further details see page 417



A Happy Christmas to all our Readers

POINT of VIEW

ECONOMICS AND CHRISTMAS By Mark Abrams

FOR the first eleven months of the year the average British family spends approximately ten pounds a week on goods bought in all retail shops—grocers, butchers, drapers, outfitters, chemists, tobacconists, etc. Then in December there is a temporary, but enormous, jump in everyone's standard of living, and the average household raises its spending to almost fifteen pounds a week. For a few days we live in fine style, spending lavishly on goods which we hope will bring pleasure to our friends, our children and ourselves. This is now a part of the Christmas season so firmly established that we all take it for granted.

FOR the economist, however, this annual outburst of high living has a special significance. He can regard it as some sort of secular festival at which the British people, without being aware of it, testify to the fact that our prosperity is built on our ability to draw on the wealth of the outside world. In these islands we take it for granted that at Christmas there will be at our disposal an abundance of goods either made abroad or else made here from materials produced abroad—wines from Spain and France, nuts from Italy and Brazil, jumpers and cardigans from Australian and South African wool, fireside chairs from Scandinavian

timber, cigars and cigarettes from Jamaican and Rhodesian tobacco, toys from Japan, dates and figs from Tunisia and Turkey, chocolates from Ghanaian cocoa beans, watches from Switzerland, oranges from Israel and Morocco, Christmas puddings and mince pies from New Zealand butter, Australian fruit and Canadian flour, perfume from France and Bulgaria, gramophone records of American orchestras and Italian singers, handkerchiefs from Egyptian cotton, cameras from Germany, party shoes from Italy, and, of course, Christmas cards from Scandinavian woodpulp. During this month the shopping centre of every large city will be constantly crowded by people brought in by cars and buses driven on petrol from Venezuela and Iraq; and even a casual walk through these shopping centres will confirm the point that practically every country in the world has been called upon to provide the British people with the unusually high standard of living we enjoy for these few weeks.

IN short, the Christmas spree is one of our major imports, and like all imports it has to be paid for—paid for by exports of our own goods and services. And so far this year we have not done particularly well at paying for our own imports. Indeed, in recent

months we have been doing a much worse job of paying for them than ever before. In the first nine months of this year our imports from overseas were up by 16% as compared with a year earlier, but our exports to pay for them rose by only 9%. Of course, differences of this kind cannot persist. Sooner or later the two sides of the balance sheet have to balance. But there are two ways of bringing about the new equilibrium. Either we can take steps which will increase our exports, or we can adopt policies which will reduce our imports.

ALMOST everyone who has discussed the subject has urged the former solution, but in fact there is no reason why we should not solve the problem by cutting our imports. Indeed, if we are unwilling or unable to increase our exports this is the obvious alternative—less of those attractive imports that we are all going to enjoy so much during the next few weeks. But somehow, although logical, that does not seem the most sensible solution to our present difficulties. We have been told that "exports are fun." This may or may not be true, but certainly imports are fun. In the last resort we need more exports for no other reason than that we want to extend to everyone in this country the pleasures of a higher standard of living.

The opinions expressed in this article are not necessarily those of the Company

BRITAIN'S ONLY SALT MINE

By J. A. Beckett

Four hundred feet below ground in Cheshire is the only salt mine in Britain. Once upon a time there were many Cheshire salt mines, but today these mines are flooded—except one. This mine, recently modernised by ICI, produces a rock salt which can be stored without spoiling in the open and is invaluable in keeping roads clear of snow and ice.

LAST month the Minister of Transport, Mr. Ernest Marples, formally opened ICI's modernised Meadow Bank rock salt mine and its new surface installations at Winsford in Cheshire.

Most of the rock salt mined at Meadow Bank is used for clearing roads of ice and snow, and since much more attention is now given to keeping traffic flowing in winter, the demand for ICI rock salt has risen enormously. The action of salt spread on snow and frost-bound roads is to combine with the ice to form brine, which has a lower freezing point than water. Unless conditions are exceptionally cold, roads which might otherwise have been frozen up are thereby kept open.

Several years ago most local authorities waited until roads were becoming ice- and snowbound before ordering salt. This was understandable, since ordinary salt is difficult to store—it takes up moisture from the atmosphere and can set hard in storage. Because of this there was a tremendous demand when snow fell—a demand impossible to meet in such a relatively short space of time. Moreover, there was always the possibility, if not likelihood, of lorries carrying salt being held up by the weather. Those few local authorities—and there were fewer than 20—who stockpiled salt in covered depots before winter were faced with the very real danger of the salt setting hard by the time it was needed and of then being unable to spread it on the roads. All this could mean traffic dislocated, vital materials delayed, people late for work, doctors delayed, millions of man-hours wasted.

Today an increasing number of local authorities prepare for the battle against winter in summer time. More than 600 lay down pre-winter stocks of rock salt, and the orders stream into Salt Division as early as April. Snow-clearing plant is overhauled, and from the onset of winter teams of men and equipment are at a constant state of readiness to go into action on receipt of an adverse weather warning.

ICI has made a major contribution towards this increased efficiency by

developing a unique grade of non-caking salt specifically for winter road treatment—ICI Ground Rock Salt Grade 4—which is “self-thatching” and which can be stored in the open, even in wet weather, without any cover whatsoever.

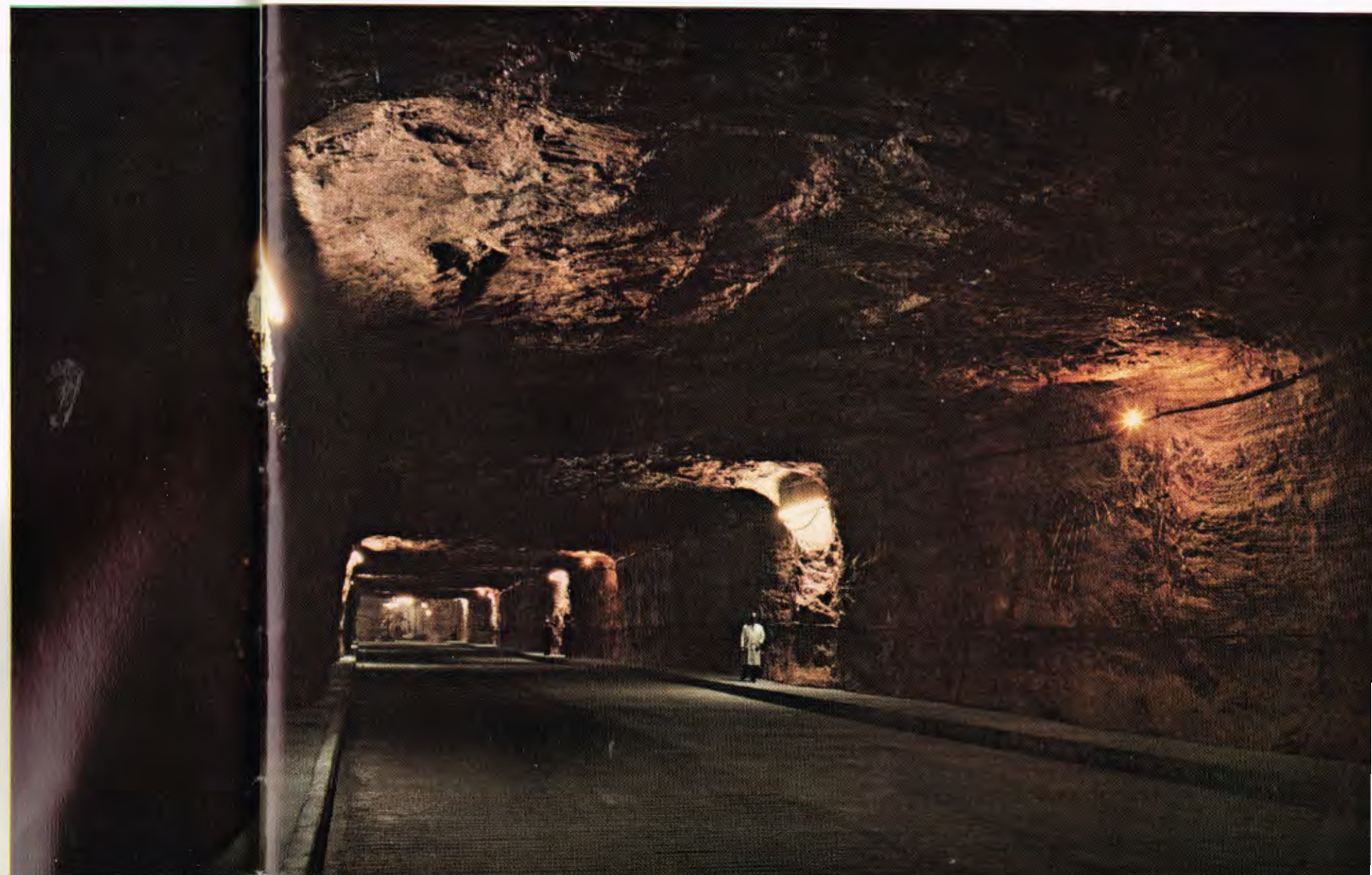
With this remarkable grade of salt now available in greatly increased quantities it will soon be practical to keep every main road in Britain free from ice and snow as a matter of routine. Indeed, there is a growing demand from road users that this shall be so.

As part and parcel of the development ICI made a very considerable effort to ensure that the properties and advantages of this improved grade of salt were known to every possible user. A succession of advertising campaigns were conducted by Central Publicity Department. Advertisements appeared in a host of trade journals; technical booklets were produced; leaflets were mailed to local authorities at pre-

determined intervals exhorting them to stockpile ICI salt before winter. At the same time Regional sales representatives, backed up where necessary by Technical Service officers, visited local authorities. And users were encouraged to visit the Division to see for themselves how the salt was produced.

Today local authorities can decide on the location and size of stocks in advance and have the salt on site long before winter. Salt can now be stored in the open at intervals along trunk roads, and mechanised spreading of salt has become commonplace. A relatively short time ago it was standard practice to use a mixture of grit and salt on roads in winter. Nowadays many local authorities use neat ICI Ground Rock Salt, a technique which can double the speed of road treatment without increasing its overall cost.

As a result of all this, more roads are being treated with salt in winter than ever before. But what of the



The main mine motorway. Along this road rock salt is carried by lorry from the working face to the underground crusher

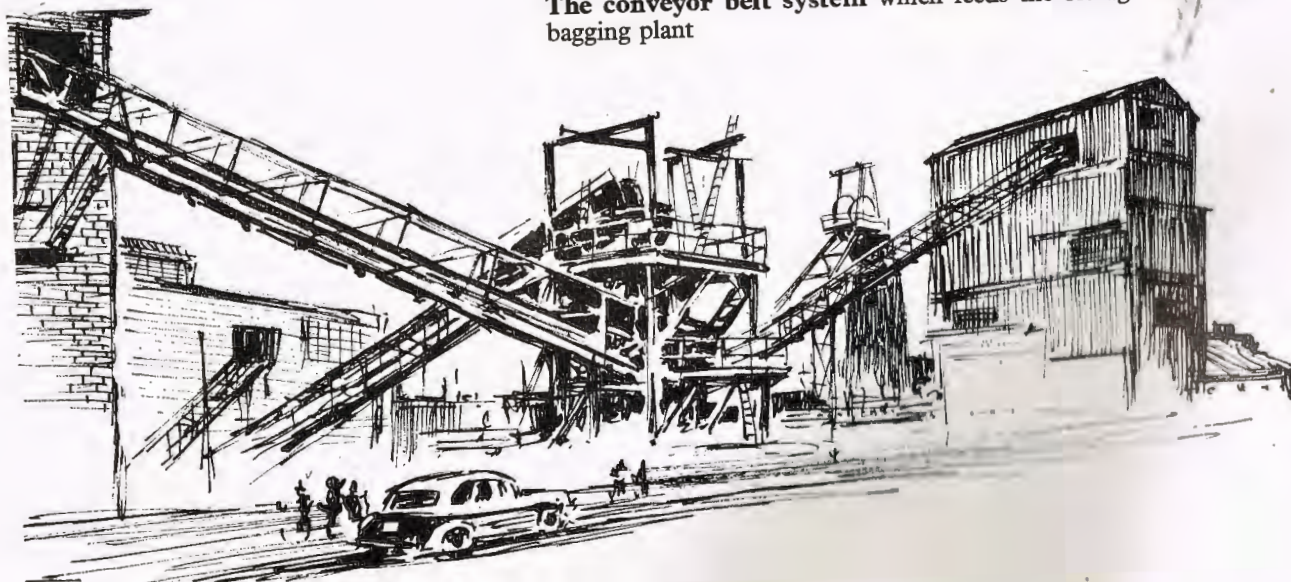


Loading rock salt on to an 8-ton lorry at the working face

Salt cascading into the underground crusher, from which it is belt-conveyed to the foot of the main mineshaft, fed into aluminium skips and elevated to the surface



The conveyor belt system which feeds the storage silos and bagging plant



Salt surplus to silo capacity is stockpiled in the open, where it is loaded into lorries by mechanical shovel



The control room for the underground conveyor belt system and elevating system

FOUR USES OF GROUND ROCK SALT



Aluminium refining. Ground rock salt is used as a flux in the refining of aluminium scrap



Food for livestock. Ground rock salt is an important ingredient in many compound animal feedingstuffs



Preparing for sugar beet. Sodium is an essential fertilizer for this crop and is supplied by spreading ground rock salt on the land



Keeping the roads open in winter. Spread mechanically at about one ton per mile, ground rock salt melts ice and snow and inhibits further freezing

future? With the building of new roads and the growth of multi-lane motorways even larger quantities of salt will be needed. With this in mind, Salt Division took the decision to increase substantially its production of ground rock salt and to modernise Meadow Bank Mine.

The modernisation scheme has cost £500,000 and has trebled the mine's productive capacity. Planned as a two-year programme, it was completed ten months ahead of schedule—a formidable achievement, for it meant completely re-equipping the mine and bringing in mechanical handling right from the working face to the despatch points.

New Equipment

An entirely new system of forced ventilation was put in and a more efficient method of bringing salt to the surface, using aluminium containers, now makes the most of elevating power. A primary crusher the size of an average house had to be installed underground. Much of the equipment needed below the surface, such as crushing plant, diesel-powered lorries and mechanical loaders, was so large that it had to be dismantled before being lowered into the mine and then reassembled underground. All this had to be done without interrupting production.

ICI's rock salt is not white but varies in colour from amber to dark brown. It is literally "rock hard," and a cubic foot weighs almost 1½ cwt. Meadow Bank Mine, which is Britain's only working salt mine, is 475 ft. deep, and the underground workings extend over more than 45 acres. The salt is won from a 20 ft. high panel cut out of the bottom section of an 80 ft. thick bed.

How Salt is Mined

The first operation in mining is to undercut the face of the rock salt to a depth of 10 ft. Then a fixed pattern of shotholes is drilled into the face above the cut. The holes are charged with explosive which is detonated electrically, and normally about 600 tons of salt are brought down in one firing.

After a round of shots the rock salt is loaded mechanically into diesel-operated tipper lorries which carry the salt from the working face to the crushing area. Here the salt is tipped into a primary crusher which reduces it to medium-size pieces for easy handling. It is then belt-conveyed to the foot of the main mineshaft, fed into aluminium skips and elevated

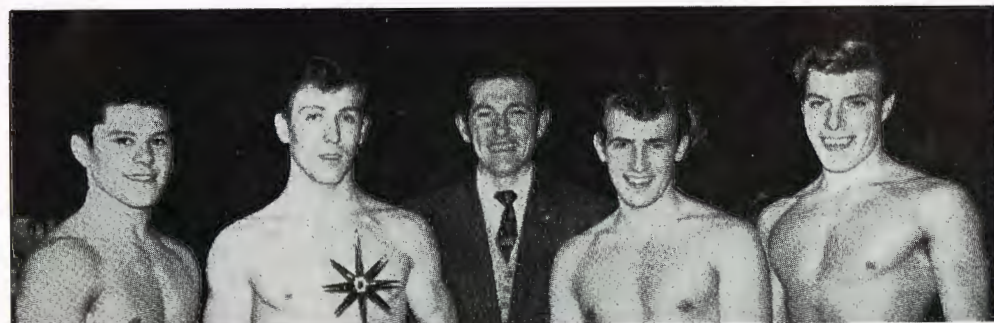
Continued on page 419

NEWS IN PICTURES

Home and Overseas



The Duchess of Kent, Patron of the Professional Nurses and Midwives conference exhibition, visited the ICI Pharmaceuticals Division stand during the Exhibition held in London in October. Also in the photograph are (centre) Sir Cecil Wakeley, President of the Royal College of Surgeons, and (left) Mr. E. Marshall of Pharmaceuticals Department, Southern Region



Four gymnasts from Billingham Division were awarded one of the four Frankie Vaughan trophies for the best entertainment in the special show held at the Royal Festival Hall in aid of the National Association of Boys' Clubs. Here with their P.T. Instructor, Mr. A. Hart, are (l.-r.) P. Barker, K. Coppick (with trophy), L. Readhead and G. Ferguson



M. W. O. Cumming, Works Relations Officer at Wilton, retired last month after nearly 33 years' service. He joined Wilton from Southern Region in 1948. As a member of the Saltburn and Marske Urban District Council, he was chairman in 1957-58. In recent years he has been a member of the Magazine Advisory panel



One-boat navy. This 8 ft. boat made from 'Alkathene' is used for clearing weeds from the pond outside the Directorate block at Plastics Division's headquarters at Welwyn

Cheshire champions. Our picture shows four of the five members of General Chemicals Club, Runcorn, rifle section who represented Cheshire in the recent English Counties Championship. They are (left to right), J. R. Derbyshire, W. E. Brookes, Mrs. P. Cummings and A. Thomason. Mrs. Cummings and Messrs. Derbyshire and Thomason, shooting as a team, also won the County disc-breaking championship



Safety goggles. While clearing a boiler blockage on the Wilton site, a piece of clinker the size of a golf ball forcibly struck the safety goggles Mr. Ferenc Molnar was wearing. Here he shows the cracked lens which saved his eye from serious injury



Safe handling. Dyestuffs Division's Huddersfield Works' second safety campaign stressed the importance of correct handling. Photographed at the opening of the campaign, men and dogs of the RAF demonstrated correct handling in their own particular field

Yoruba warrior. One of the attractions on the stand of ICI Export Ltd. (below) at the trade exhibition held to celebrate Nigeria's independence was (right) this life-size model of a Yoruba warrior. Dressed in authentic clothing, the model was fully automatic and sprayed the pods of the cocoa plant at regular intervals with ICI's 'Perenox,' used to check black pod disease





Investitures. Mr. E. T. Grint, head of Central Labour Department (*centre, above*), received the CBE from the Queen on 2nd November. Photographed with him are (*left to right*) James Milligan (son-in-law), Miss Christine Grint, Mrs. Grint, Mrs. James Milligan (daughter) and Michael Grint. *Right:* Mr. C. L. Oakes of Wilton Polythene Works was invested with his BEM by the Lord Lieutenant of North Riding, Sir William Worsley, at a ceremony in the Wilton Training Centre. Also in the picture are his wife and (*far right*) Mr. J. B. Kitchin, Plastics Division Personnel Director



Half a dozen Davies. Six employees of Billingham's Dowlais Works all named Davies qualified for 20-year watches recently. Here (*from the left*) are Messrs. B., L. P., A., D. P. and J. H. Davies. Mr. S. Davies was absent



Defying capture. A red stag, thought to have strayed from its herd, is watched by Alkali Division employees from the windows of Brunner House. It spent a whole afternoon in the Division Grounds before wandering on to the Warrington area



Floods at Yalding. During the recent floods in Kent, water rose to 3 ft. 6 in. on the road running through the works and offices of Plant Protection Ltd. at Yalding. Our picture, taken by lab assistant Mr. A. C. Waters, shows the Company's flooded sports ground and partly submerged pavilion



Sir Brandon Rhys Williams (Plastics Division), the Tory candidate in Ebbw Vale's by-election last month, chats to a constituent. Sir Brandon ran second to the successful Socialist, Mr. Michael Foot



John Place of Metals Division was one of two local boys chosen to represent Birmingham boys' clubs to carry messages between the city's Lord Mayor and St. James's Palace, London. The Duke of Gloucester received 180 such messages from boys' clubs throughout Britain at the beginning of the annual club week



Mr. Percy Thrower presents the first prize of the *Cumberland Evening News* gardening competition to Mrs. D. Hewitt of Carlisle before a public meeting organised there by Plant Protection Ltd. Mr. Thrower spoke to an audience of nearly 500



An unusual presentation occurred at Billingham Division recently when Mr. R. Casson (*centre*) and his son, Mr. J. Casson (*right*), received 20 years' service awards on the same day



Meadow Bank extensions. The Rt. Hon. Ernest Marples, Minister of Transport (*second from left*), watches rock salt being loaded into diesel dumpers. He had just opened extensions in the ICI Meadow Bank Rock Salt mine, on 21st November. Mrs. Marples, Mr. Paul Chambers, ICI Chairman, and Mrs. Chambers (*4th, 5th and 6th from left*) are also in the group



1960 Motor Show. ICI (Hyde) Ltd. personnel visiting the Motor Show take a look at the Hillman Husky saloon exhibited by the Pressed Steel Company, which is a principal customer of ICI (Hyde) and Paints Division. 'Vynide,' an ICI (Hyde) product, was used for the interior. At the wheel is Mr. E. Mellor, with Mr. S. Jackson as passenger



The annual meeting of the Central Committee of the ICI Foremen's Associations was held in Imperial Chemical House on 15th October. This group was taken in the Victoria Tower Gardens. The newly elected chairman, Mr. T. W. Littlefair of Billingham Division, is seventh from the right

FIFTIETH

CENTRAL

COUNCIL

State pensions, long service awards, retirement well to the fore at the fiftieth meeting attended by Mr. George Woodcock, general

Photographs by George Birtle and

ent gifts and convalescent homes were matter of Central Council at Blackpool last month secretary of the Trades Union Congress.

Norman Hardwick (Billingham)

Before the fray. In the foreground is Mr. J. Rhodes, acting secretary of the Council

AT Blackpool last month we celebrated Central Council's half-century. The inaugural meeting, under the chairmanship of Lord Melchett, was held in April 1929 at Millbank, and among the Paints Division contingent to last month's meeting was the lone survivor of that early gathering, **Mr. R. C. Pearmain** from Smethwick Works, who won a special round of applause from Council.

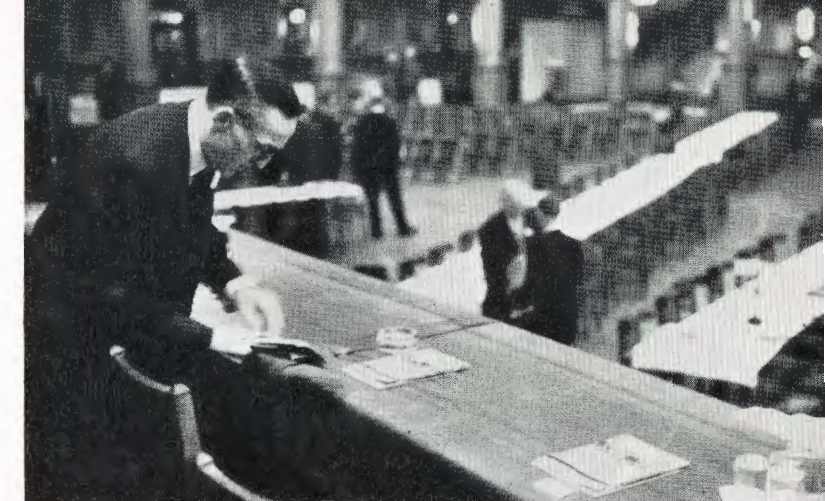
Mr. S. P. Chambers prefaced his opening address with a reference to the special nature of last month's meeting. "I am in no doubt," he said, "that the contributions which the Works, Division and Central Councils have made to creating a better understanding of our problems have had the double advantage of making ICI not only a better firm to work for but also a more efficient one."

The Chairman's speech was in the main a cheerful one. He referred to the record half-yearly results, announced in September. Once again, he considered, the operation of expensive plants at outputs nearer to capacity had been an important factor in the more than proportional increase in income (sales up 15%, income after taxation and depreciation up 38%). Progress continued to be more rapid in sales to the Outer Seven, the Inner Six, and to Soviet Russia and the other countries in the Eastern bloc than in sales to other markets. There were signs of change in the relative importance of various products. "As is to be expected, the rate of growth of exports is greater with the newer chemicals, such as plastics, fibres, the products of HOC Division and the newer dyestuffs."

Exports of heavier chemicals could not be expected to increase in any spectacular manner because the countries to which we had been selling them were setting up their own industries to manufacture these products. As industrialisation proceeded in other countries, other products would probably be affected in the same way. However, he thought we should not be alarmed. "Trade in chemicals is greatest between highly industrialised countries," he pointed out, "and in every country the demand for chemicals increases as industrialisation proceeds." Present indications were that despite more difficult trading conditions, sales and profits in the second half of 1960 would also make a good showing.

He also told Council of the Board's decision that for the present no action would be taken to penalise unconstitutional strikers under the Profit-Sharing Scheme. They hoped that "an atmosphere of mutual confidence and understanding on the part of management and employees will ensure that hasty action is avoided." He added that,

Talking Point. Mr. S. P. Chambers, ICI Chairman, in conversation with Mr. E. Hutton (Billingham Division)



jointly with the trade unions, ICI was studying ways of bringing about better appreciation of the negotiating procedure among the rank and file of employees.

There was good news of our joint companies. British Nylon Spinners were again increasing the scale of their operations, and we were adding to our polymer-producing capacity to meet this. Impalco was in the throes of reorganisation, and when work was completed the capacity of the rolling mills would be more than doubled. Yorkshire Imperial Metals were also showing good results, with a further 9% increase in sales.

On a sad note he mentioned the death in September of **Mr. Cyril Morris** (Yorkshire Imperial Metals), who had been chairman of the workers' representatives on Central Council many times, and the premature retirement owing to ill health of **Mr. C. R. Prichard** (Group A Director) and **Mr. Alfred Inglis**, the secretary of Central Council for the past 25 years. (A voluntary collection during the meeting for a gift for the latter raised over £50.)

Thank You to Sir Alexander

The first item of business for the day—a very pleasant one—was a progress report on the Fleck Youth Award Scheme (the details were given in our last issue). A special telegram of thanks was despatched to Sir Alexander at the request of the chairman of the workers' representatives.

Next **Mr. C. M. Wright** (Personnel Director) rose to speak about the State Pension Scheme, which proved to be the big talking point of the day. He formally announced that in the light of all the circumstances the Board had decided that as from next April all employees would participate in the new State scheme. The consultations with Works Councils and Staff Committees promised at Scarborough in May had duly taken place, he reported, and by July it was apparent that "the great majority of Works Councils and Staff Committees had accepted the Company's proposal to opt in to the State scheme."

The State Pension Scheme

There had been some criticism at the lack of time given for employees' views to be obtained. Some employees, he thought, had assumed that because the new scheme did not begin until April next year, no decision was necessary until nearer the date. That, he was at pains to point out, was not so. Full details of the scheme had not been available until the end of 1959, and notification had to be given by last September if the Company intended to opt out. "I can assure you that the panel I set up last December worked very hard indeed to have its recommendation available in time for the last Central Council, and in fact ICI was the first large company to make its proposals known." Other large companies which had since reached the same decision as ICI included Unilevers, Boots, Dunlop, Fisons, Stewarts and Lloyds, Imperial Tobacco and the Midland Bank.

As soon as **Mr. E. Hutton** (Billingham), the chairman of the workers' representatives, stepped up to speak, it became obvious that many people had been having second thoughts since July. Mr. Hutton tabled the motion:

"That this Council regrets that full consultation was not given on the subject of the National Insurance Act and asks that a special meeting be arranged of up to four worker representatives from each Division Council and Pension Fund officials of the Company to investigate further and make good this apparent omission."

RIGHT: In session. Central Council at the Winter Gardens, Blackpool. BELOW: Broad smiles from Billingham. Mr. George Woodcock, general secretary of the Trades Union Congress (fourth from right), at the Billingham table. Others (from the left) are Dr. W. Bridge, Mr. E. Hutton, Mr. F. Ferguson, Mr. J. Black, Mr. F. M. Lambert, Mr. W. E. Humphreys, Mr. E. D. Bailey and Dr. A. Robertson (Central Labour Dept.)





Above, left: Mr. J. Jackson (left) of Salt Division thrashes out a point with a colleague, Mr. G. R. Carman. Centre: Mr. R. Bryan (facing) queries Mr. F. W. B. Atcheson's argument. Right: Mrs. M. H. McNamara (Nobel Division)



Above, left: Mr. W. Warburton (Alkali Division). Centre: Members of Plastics and General Chemicals look at old records of early Council meetings. Right: Mr. H. Shaw and Mr. L. J. Stretton (both of General Chemicals Division)

This produced a crop of forceful speeches. Almost all expressed lack of confidence in the extra benefits of the State scheme, and there were some incidental bouquets for our own schemes. There is only room to quote a few. **Mr. Hart** (Wilton) appealed to the Board to reopen discussion on the subject. "If we have got to pay the extra money, let us pay it to the ICI scheme, where we get better value." **Mr. Auld** (Nobel) thought it a bad mistake that there had not been a worker on Mr. Wright's special committee. **Mr. Goodsell** (Wilton) said that he had a lot more faith in the Chairman and his colleagues than in the Government. "Look at post-war credits," he advised Council, "the greatest fiddle out." And he thought it a bad sign that the Government had devised this scheme, which was supposed to be to everyone's benefit, yet it was contracting out its own employees (the Civil Service). **Mr. Barrett** (Metals) was also "not satisfied that going in" gave best value for money and proceeded to dazzle us all with a positive barrage of statistics to prove his point. **Mr. O'Byrne** (Dyestuffs) pessimistically opined that we should find ourselves "paying in pounds to get sixpences back."

Tight Timetable

Mr. Wright, replying, said that he was disturbed by the suggestion of inadequate consultation. He had already explained the "tight timetable," but they had gone to a lot of trouble to brief people fully. Less than 10% of Works

Councils had been against going in. If there had been any volume of opposition a special meeting of Council would have been called in September.

The Chairman also had a word to add. With a little hindsight the Board, he felt, might have been wise to call a special Central Council—he wished now they had. Nevertheless, the matter had been discussed thoroughly with the Trades Union Advisory Council, who had been unanimous that the Company was doing the right thing. The Board still felt that their decision was the right one, but the matter was certainly not closed irrevocably.

Voting revealed less than 10 against the motion, which the Chairman on behalf of the Board accepted.

Focus on Profit-sharing

Profit-sharing, a hardy annual, came next and was speedily dealt with to everyone's satisfaction. Mr. Chambers told Council that the Board had agreed that in future employees would be issued with shares when they had reached forty in number or after two years, whichever was sooner.

A Nobel Division motion (proposed by Mr. Auld) that employees prematurely retired on the grounds of ill health in their thirty-fifth year of service should be given the Company's retirement gift got little support outside its own Division. **Mr. Cumming** (Nobel), seconding, appealed to Council's generosity. The motion affected people in ill health—people who perhaps could count their

future only in months. But **Mr. Britton** (Billingham) probably voiced many people's view when he pointed out that to accept the Nobel motion was merely to create another class of unfortunates—those with almost 34 years' service—and the sum total of disappointment would not be at all reduced. Then **Mr. Warburton** (Alkali) moved the following amendment:

"That when an employee is prematurely retired for reasons beyond his control in his thirty-fifth year of service, sympathetic consideration should be given to his being presented with a Company's retirement gift, always providing he would otherwise have been able to complete 35 years' service to normal retirement."

Mr. Barrett (Metals) said he opposed the motion. In referring to ill health only, it left out too many people. The amendment remedied this. The amendment was eventually carried by 98 votes to 77 and was accepted for consideration by the Board.

Payment of wages through a bank started the afternoon session off. **Mr. P. T. Menzies** (Finance Director) reported that there were now over 2800 (about one-third of all payroll employees on the site) in the scheme at Wilton, which started with 300 in May 1958. In spite of the extra cost of operating such a scheme—roughly 10s. a year for each employee—the Company hoped to see it extended to other parts of the Company. It appeared that the scheme would not be too difficult to put into practice in England and Wales once it was known how many employees were

in favour, but (and he raised a hearty laugh here) the problem was greater in Scotland, for the Scottish banks were seeking to levy much heavier charges than in England and Wales.

The Chairman added his tribute to the Wilton men who had done so much to make the Wilton experiment a success, **Mr. McEntee**, **Mr. Charlton** and **Mr. Goodsell**, the pioneer of the scheme.

Improved pensions for widows was a cause championed by Plastics and Alkali Divisions. Even the State pension gave £2 10s. to a widow, which is 62½% of the £4 for a married couple, pointed out **Mr. Stephenson** (Alkali), while the ICI pension only gave 50% and no one would argue that living expenses for one did not cost more than half that for two.

Mr. Rogers (Alkali) appealed to the Board that if there was "anything left in the kitty" when the results of the pension fund valuation were known, it should go to the widows. **Mr. Hill** (head of Pensions Department) told Council that the increase asked for (70% instead of 50%) would mean a capital cost of not less than £5,100,000.

A Plastics Division resolution on the subject was passed by 50 votes to 5 and is to be taken into account when the Board considers the results of last March's valuation.

General Chemicals Division went to town over long service awards. First they wanted a man to be able to opt for a lady's watch if he so wanted as a 20-year award. **Mr.**

(continued on page 419)

Below, left: Observers from the Dyestuffs and Billingham Divisions. Right: Mr. Chambers presents the ICI Safety Trophy to Mr. E. J. Callard, chairman of Paints Division. Mr. J. B. Doyle, head of Central Safety Department, looks on

Below, left: Mr. A. Brookes (left) and Mr. C. Eunt (General Chemicals). Centre: The Chairman and Mr. Woodcock with Mr. V. R. Goodsell and Mr. G. Bishop (Wilton). Right: Mr. T. H. Garton (left), and Mr. R. G. Jackson, (Alkali)



People and events . . .

Rock Salt on the M1

MR. Ernest Marples, the Minister of Transport, visited Winsford on 21st November to open the £½ million extensions to Salt Division's Meadow Bank rock salt mine, the only working salt mine in Britain. An article about the mine appears on page 400. Nearly two hundred visitors gathered in the marquee above ground to hear Mr. Marples speak and to watch as he declared the rock salt mine extensions officially open by pressing a switch which started an ear-splitting recording of the noise of an actual explosion down the mine.

One of the reasons he was glad to be at Winsford, said Mr. Marples, was that he was fascinated, and at the same time awed, by the problem of road safety. (ICI's rock salt plays a big part in keeping Britain's roads safe in winter.)

"A first-class road in good weather is very much better," he said, "than an ordinary road, but a first-class road

in bad weather can be much more dangerous for the driver. The reason is that on the M1 the driver goes too fast in bad weather, whereas driving on a winding road he takes care with the way in which he takes the bends. It is up to the Government to see that roads like the M1 are adequately treated for adverse weather conditions. We have elaborate equipment on the M1, some of which we have purchased from Switzerland and Germany; we have trained men and material, including some of your rock salt, and the moment there is any sign of ice or snow threatened at all, the road will be treated."

Princess's Painting

WHEN Princess Alexandra was in Ibadan during her recent Nigerian tour she was given a watercolour painting which is the work of Mrs. Christine Darter, wife of **Mr. I. E. Darter**, agricultural adviser to the Nigerian office of ICI (Export).

The story behind it is this. Mrs. Darter had been commissioned by the Department of Forest Research to do the botanical illustrations for *Nigerian Trees*, a book in two volumes, one of which has now been published. The frontispiece of the first volume is a watercolour of an attractive flowering tree, *Monodora*.

Princess Alexandra planted a young *Monodora* tree in the grounds of Government House, Ibadan, to commemorate her visit, and Mrs. Darter was asked if she would present her painting to the Princess. The photograph (left) shows the presentation, with a forest guard in the background holding the tree to be planted.

Incidentally, before she was married Mrs. Darter worked for Plant Protection Ltd. in the film unit.

Gold Medallion

AT Central Council last month **Mr. A. J. B. Doyle**, head of Central Safety Department, announced two new safety awards. Besides the bronze medallion given to any works which completes a million hours without a lost-time accident there is in future to be a silver medallion for those reaching the two million mark (eleven works have done so since the last war) and a gold medallion for three million and over.

The first gold medallion was presented at Central Council by the Chairman, **Mr. S. P. Chambers**, to

Dr. R. N. Kerr, works manager of the Castner-Kellner Works of General Chemicals Division. Castners made ICI history last August by breaking the existing ICI safety record of 2,871,970 hours set up by Crosslee Factory back in 1935. Later the same month they reached three million, and at the time of Central Council they had topped the four million mark.

Christmas Cover

THE man behind our very beautiful front cover this month is **Mr. John Owens**, an organic chemicals sales representative with Southern Region. He is something of an expert on Byzantine art, for after reading history at Oxford he won a travelling art scholarship and studied Byzantine mosaics in Italy and Sicily.

He tracked down this magnificent photograph of Christ Pantocrator for us. It is one of a number of superb illustrations in *Byzantine Painting* produced by the Swiss publishing house of Skira, who loaned us their blocks.

The mosaic, Mr. Owens tells us, was constructed around the year A.D. 1100 in the Byzantine Church of Daphni in Greece. It fills the centre of the dome, symbolically the vault of heaven. Measuring approximately 12 ft. across, it is composed of thousands of coloured stones.

Christ, "the Ruler of All," is terrible in his power. His right hand is raised in blessing, while his left holds the Gospels. He is surrounded at a lower level by sixteen prophets and by various scenes from his life, such as the Nativity and Crucifixion.

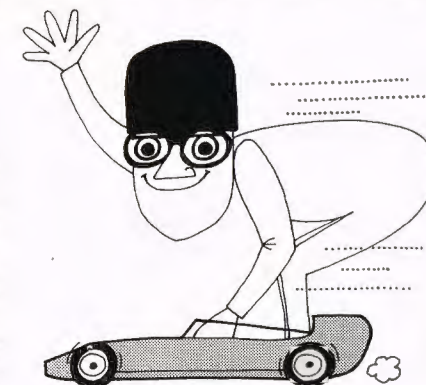
Track Thrills in Miniature

AMODEL racing car which it is hoped will break the existing English speed record of 132.5 mph has been built by **Mr. A. W. Bennett**, Plant Protection Sales Manager for the London area until he retired last year.

During a recent trial run the car reached an unofficial speed of 142 mph—only 8 mph less than the all-American miniature car world record. The car is powered by a 10 cc engine fitted with a small magneto and uses alcohol mixture fuel. Mr. Bennett made almost all the components, including

the engine, gearbox and magneto, in his workshop at his home in Maidstone. The body is made from resin-bonded glass-fibre, and the car has tubeless pneumatic tyres.

Mr. Bennett first started making model cars ten years ago. Building



engines, he says, is his first love, "but once I have built a car I can never resist racing it." Next season, when his new car has been properly tuned, he hopes, weather permitting, to break the official English speed record for model cars.

New "Do-it-yourself" Colours

PAINTS Division announced last month a re-planned retail colour range in 'Dulux' and 'Dulite' for 1961. In future no fewer than 20 colours will be available in gloss, eggshell and emulsion paints and another 10 in gloss only. New colours in the first category include Lilac, Citrus and Tawny Red. New gloss-only shades include Post Office Red and Peat, a deep velvety brown.

Selection of next year's colours has been the prime responsibility of **Mr. Stanley Wood**, ICI's chief colour adviser. He heads a team of colour designers who between them give out more paint colour advice than any other body in Britain.

The first ICI tinting machine (announced in our October issue) should be in operation within the next few weeks. Others will go into service just as fast as they can be built. The machines can mix any of 250 colours in 'Dulux' and 'Du-lite' in a matter of minutes. New colours for this service include Pagoda (a muted red), Sorrento (a distinctive Mediterranean

CHRISTMAS QUIZ

Compiled by Timothy Franklin
(General Chemicals Division)

People

1. Who are (a) Acadians? (b) Orcadians? (c) Arcadians? (d) Arminians?
2. Who said to whom: "I am trying to make new countries: you are making new men"?
3. Who are or were these famous sportsmen: (a) the ghost with a hammer in his hand? (b) Lord Edward? (c) The Barnacle? (d) Slamming Sammy?
4. Who said: "The law is a ass"?
5. Who originated the following popular expressions: (a) "Funnypicular or funny ha-ha"? (b) "Gentlemen prefer blondes"?

Places

1. The Simplon tunnel between Switzerland and Italy is the longest tunnel in the world. True or false?
2. Where is (a) The Naples of the North? (b) St. Anthony in Roseland? (c) The Chessboard City? (d) The Golden State?
3. What are the present-day names of (a) Christiania? (b) Rio de Oro? (c) Britannia? (d) Queen's County (Eire)?
4. Which of these cities has not staged the Olympic games: London, Paris, New York, Berlin, Antwerp, Stockholm, Amsterdam?
5. Travelling by main road routes, which is the greatest distance: London-Liverpool, Carlisle-Aberdeen or Birmingham-Dover?

Things

1. Why (a) does a man's hat have a small bow inside? (b) is corrugated iron nailed through the rising part? (c) is the yew-tree common in country churchyards?
2. Ornithorhynchus. Is it animal, vegetable or mineral?
3. Which game is played by the Tramps, Ghosts, Bacchanals and Cheetahs?
4. What have the following in common: (a) Saxony, linsey, scrim? (b) Sapele, afrormosia, tola? (c) Waterford, Lalique, Orrefors?
5. Which of these can you eat: Gneiss, gnocchi, gumbo, gnomon, pipistrel, popadam, pampiro, pikelet?

Answers on page 419



Mrs. Christine Darter presents her painting to Princess Alexandra

IN BRIEF

ICI Board Appointment. The Right Honourable Viscount Amory of Tiverton, P.C., has been appointed by the ICI Board to be a non-executive director of the Company with effect from 8th December.

Silvertown Works to Close. Alkali Division announced with regret last month its decision to close Silvertown Works, London, at the end of March. The works produces washing soda, which the Division also makes in a large plant at Winnington and which can now be more economically concentrated there. About 140 employees are affected.

Indoor Bisley. An "indoor Bisley" contest is currently being held in Birmingham. The main sponsors of the meeting are the Warwickshire Small Bore Rifle Association, whose teams include a number of expert marksmen from Metals Division, among them Arthur Skinner and Bill Godwin, both of whom shot for Britain in the Olympic Games. It is hoped that the meeting will become an annual event in the small-bore shooters' calendar.

Wilton Youth Centre. An offer from the Company of premises and financial assistance for a trial period of two years to the thousand or so young people at

Wilton for the formation of a youth centre was announced by Mr. J. Grange Moore, Works and Personnel Director, at the recent Wilton Site Council meeting. The centre will also be available to other young people outside the Company.

Challenge Cup Winner. To his long list of successes in the field of horticulture, Dyestuffs Division's Dr. J. T. Watts, assistant manager of the polymer and chemicals service department has now added the National Rose Society's Challenge Cup for unaided amateurs. Dr. Watts is to be congratulated on a noteworthy achievement which has taken him to the very top flight of rose growers in this country.

Unusual Role for 'Terylene.' 'Terylene' played an unusual role at the recent launching by Princess Alexandra of the anti-aircraft frigate H.M.S. *Jaguar* from Messrs. Denny Bros.' shipyard at Dumbarton. To prevent glass from the bottle of champagne scattering over the launching platform, Dennys asked the Gourrock Rope Company of Glasgow to provide a small-mesh 'Terylene' net to cover the bottle. This was done, and it performed its task very satisfactorily.

turquoise) and Arabis (the palest of greens). There will be a small matching service surcharge on top of the usual 'Dulux' prices.

A Popular Technology

THE publication on 27th October of *A Short History of Technology* marked the completion of a project with which ICI has been associated for over ten years. It began in 1949, when the Clarendon Press agreed to collaborate with the Company on the

production of a five-volume *History of Technology*. Sales of the resulting 4400-page work have surprised even the publishers, but at 40 guineas a set it is obviously not a book the average man can afford to have on his bookshelves. The shortened version just published at 38s. is, however, within the reach of many people's pockets and should prove very popular.

The authors of the shortened version are **Dr. T. K. Derry**, senior history master at St. Marylebone Grammar School, and **Dr. Trevor Williams**, editor of *Endeavour*, ICI's international science review, and managing editor of the later volumes of the original *History of Technology*. A review will be appearing in next month's *Magazine*.

Escape Story

IT was Christmas Day 1941 and Hong Kong had just surrendered. Searchlights from a Japanese destroyer carved arcs through the night as four Royal Navy motor torpedo boats hidden among the islands awaited the order to charge out of Hong Kong harbour towards the open sea.

The MTBs opened their throttles wide, and their racing propellers, catapulting them forward at 30 knots, left a fan-like phosphorescent wake behind them like the vapour trails of aircraft. Suddenly one of the probing lights picked out the tiny boats. For a seemingly interminable period the crews prayed silently, expecting the destroyer's shells to blast them out of the water. Minutes went by, and still there were no telltale flashes from the Japanese warship's guns to herald the despatch of a cargo of high explosive.

* * *

Now, nearly nineteen years later, it sounds an impossible story, but it actually happened, and the crews with a Chinese Admiral among their passengers escaped from under the noses of the Japs. Eventually, after a grueling journey through Jap-infested China, hunted part of the way by Japanese spotter aircraft, the sailors rejoined British forces in Burma.

Alive to tell the tale of the escape is **Mr. Ray Brogden**, a leading hand on Polythene Works at Wilton. He was a Leading Telegraphist aboard one of the MTBs. An ex-R.N. regular, Mr. Brogden now lives with his wife and three young sons in Middlesbrough.

He is not likely to forget Christmas 1941, but should his memory fail him he still has a day-by-day diary of the trek across China, pencilled in a prayer book given to him at his confirmation on H.M.S. *Ganges* in 1933 and which survived the adventure.

New 'Terylene' Factory

THE promise made by the Company two years ago that the next 'Terylene' spinning plant would be located in Northern Ireland as and when the development of the 'Terylene' market made it necessary has been taken a stage further. Fibres Division announced last month that the purchase of a 200-acre factory site at Kilroot, near Carrickfergus, is being completed, and site development begins next year with a view to starting production in 1963.

The press announcement also hints that polypropylene fibre as well as 'Terylene' may be manufactured in due course at Kilroot.

50 YEARS' SERVICE

The following employees have completed 50 years with the Company. **Alkali Division:** Mr. E. Evans, Winnington Works (24th October); Mr. P. Kirkham, Buxton Lime Works (15th November). **General Chemicals Division:** Mr. C. H. Barnett, Castner-Kellner Works (1st December); Mr. H. Cartledge, Castner-Kellner Works (13th October); Mr. J. Sumner, Gaskell Marsh Works (1st December). **Metals Division:** Mr. H. Morey, Marston Excelsior Ltd. (23rd November). **Nobel Division:** Mr. H. Fox, Ardeer Factory (26th September). **Salt Division:** Mr. B. Robinson, Rivercraft Captain (20th September). **Wilton Works:** Mr. M. Ankers (14th November).

RETIREMENTS

Some recent announcements of senior staff retirements are: **Alkali Division:** Mr. D. Drummond, Director and Chief Accountant (retired 31st October). **Compañia Sud-Americana de Explosivos (Chile):** Mr. Owen Tudor, Vice-President (retired 1st October on medical grounds). **Dyestuffs Division:** Mr. S. H. Oakeshott,

an associate manager of Polymer and Chemicals Service Department (retiring 31st December).

APPOINTMENTS

Some recent appointments in I.C.I. are: **Canadian Industries Ltd.:** Mr. W. H. Flynn, Ontario General Manager; Mr. E. H. Kemp, Treasurer. **Compañia Sud-Americana de Explosivos (Chile):** Mr. J. F. McLaughlin, Assistant General Manager. **Head Office:** Mr. J. W. B. Peel, head of East European Department (Mr. J. Wilson remains head of the present European Department, restyled "West European Department"). **Scottish Agricultural Industries:** Mr. J. S. Watkins, Director.

ANSWERS TO CHRISTMAS QUIZ

People

1. (a) French inhabitants of Nova Scotia; (b) Orkney islanders; (c) dwellers in a rustic paradise; (d) adherents of the doctrine of Arminius, a Dutch protestant theologian who opposed the views of Calvin. 2. Cecil Rhodes to W. Bramwell

Booth. 3. (a) Jimmy Wilde; (b) E. Dexter; (c) T. E. Bailey; (d) Sammy Sneed. 4. Mr. Bumble in *Oliver Twist*. 5. (a) Ian Hay (*The Housemaster*); (b) Anita Loos (*Gentlemen Prefer Blondes*).

Places

1. False. The East Finchley-Morden tube tunnel is 17½ miles—5 miles longer. 2. (a) Llandudno, North Wales; (b) Cornwall (near Truro); (c) Melbourne, Australia; (d) California. 3. (a) Oslo; (b) Spanish West Africa; (c) Wellington, New Zealand; (d) Leix (Laoghis). 4. New York. 5. Carlisle-Aberdeen (219 miles).

Things

1. (a) Survival of the days when men were unable to obtain a good fit of hat. A lace was passed through the lining and could be tightened or loosened according to need. (b) If the nails were driven through the gutters of the iron, rain would gradually eat away the holes and get through the roof. (c) A statute of Edward I commanded yews to be planted to protect the churches from strong winds. 2. Animal (the duck-billed platypus). 3. Hockey. 4. (a) Textiles; (b) timbers; (c) glassware. 5. Gnocchi, gumbo, popadam and pikelet.

BRITAIN'S ONLY SALT MINE (continued from page 405)

to the surface. On the surface the salt is discharged on to a conveyor belt which takes it to the main crushing plant. Here it is finally crushed and screened into the required grades. After screening, the salt is specially treated to keep it from caking and then fed into silos from which it can be bagged or loaded direct into road or rail vehicles.

Rock salt mining is an extremely healthy occupation

and has none of the hazards normally associated with other types of mining. There is continuous shift working in the mine, and the total number of men employed underground is about seventy. A composite work study incentive scheme which includes all operations is shared equally by all shifts.

FIFTIETH CENTRAL COUNCIL (continued from page 415)

Dutton was a good man to plead the cause. He pointed out how ICI long service awards get handed down the family. He was the proud owner of no fewer than three ICI men's watches and one ICI clock, and he was just young enough to earn another watch and a clock himself. **Mr. Melia** (General Chemicals) wanted changes in the women's 30-year award and suggested a gold bracelet as an alternative to a watch.

Mrs. McNamara (Nobel), responding to the Chairman's call for a woman's views, went a step further and suggested "a range of jewellery." Mr. Melia again wanted greater variety in the 40-year awards, like the Company's retirement gifts. His suggestions were an easy chair, a radio, a china tea service, a canteen of cutlery or an electric fire.

The first (20-year award) motion was carried by 90-89 votes and referred back to Division Councils. The motion on women's awards was carried unanimously and goes to the Board, as does a Paints Division request for a clock as an alternative 30-year award for men. But the 40-year proposal was well and truly lost—38 votes to 104.

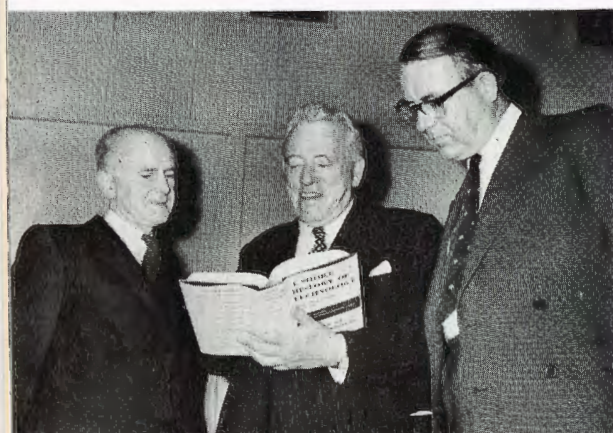
Mr. Menzies had a few words of caution about the tax position. The Inland Revenue were always on the alert to charge tax on the money value of an award received during service. An inscribed gift served the purpose

of considerably reducing the value if resold and therefore was not taxed. This point had to be borne in mind when choosing long service gifts.

There is only room for a brief mention of some of the other items discussed. General Chemicals Division wanted to do away with the lower age limit for membership of the Staff Grade Scheme—carried 162-25. **Mr. Hart** (Wilton) wanted to know if it were true that ICI was "going in with Mr. Cotton in the skyscraper business." Yes, the Chairman said, as an investment for some of our Pension Fund money; real property was a first-class investment, especially in case of inflation. "For the pension fund only the very best is good enough."

Dyestuffs Division asked for the provision of special ICI homes for rest and recuperation for which ICI workers of all classes should be eligible. **Dr. A. Lloyd Potter** (chief medical officer) remained to be convinced that there was any special need when existing (National Health) homes were not full.

Finally, mention must be made of Dr. Lloyd Potter's interesting talk on the Company's medical services and the presentation of a gold medallion to Castner-Kellner Works (General Chemicals), who had completed over four million hours without a lost-time accident. A.E.B.



Dr. T. K. Derry (left), Sir Alexander Fleck (centre) and Dr. Trevor Williams

MADONNA OF THE MOUNTAINS

by Joanna Le Fevre

This beautiful carving on the opposite page comes from the lakes and mountains of Upper Bavaria.

Let me explain how I come to know it so well.

Three years ago I travelled in Europe studying Bavarian Baroque architecture and decoration. I did this on an I.C.I. Travelling Scholarship open to students at the Architectural Association School of Architecture in their final year and awarded annually for the study of some form of architectural decoration.

As I visited churches and villages in Bavaria I came to admire very much the work of Ignaz Guenther, a name hardly known in this country. Guenther was essentially a humble Bavarian craftsman. He began his career as an apprentice and was appointed a Bavarian Court Sculptor in 1754. His works developed from the decorative scheme of their setting, but only gradually did he gain recognition as an individual sculptor. The proportions of his figures emphasise the grace of the body, so much so that some of his carvings seem to float on air amid their Rococo surroundings.

To achieve this effect sculptors sometimes made figures of light wooden framing & straw covered with a thin coating of plaster, which could easily be suspended by an invisible wire, but Guenther nearly always carved delicately in wood, which was often gilded or waxed.

He worked chiefly in limewood and the carving on the opposite page is a beautiful example of this. I love this Madonna, with her delicately flowing lines & her wonderful expression of gentle piety.



Silent witnesses to the times when men worked for three-halfpence an hour

COPPER COINS

of the

INDUSTRIAL REVOLUTION

By D. W. Evans

In the early days of the Industrial Revolution, copper coins were minted privately by industrialists to pay their men. This was because the Government would not or could not mint enough small change. The designs on these coins are a vivid reminder of the early beginnings of industrial Britain.

At various times in England's history private coinage—known as “money of necessity”—has been issued, chiefly because the Government could not or would not provide enough coins for small change and wages. But when, in George III's time, Matthew Boulton invented a steam coin press it seemed that the problem of small change was solved. The Government commissioned him to make quantities of copper coins containing their full value in copper. The penny weighed 1 oz., the twopence 2 oz. Boulton made £800,000 worth of these “cartwheel” coins, and it looked as if private tokens had gone out of circulation for ever.

But the price of copper has always been capricious. In the early years of the nineteenth century it nearly doubled—going from £105 to £200 a ton. For some people the temptation was too much. The cartwheel coins began to disappear into melting pots, being worth far more as copper than they were as coins. The Government minted no more, and by 1811 various manufacturers were having their own token coins made so that they could pay their workers. About 1700 different varieties were circulating when an Act of Parliament made them illegal in 1817. Most of them were quite genuine and could be redeemed

for Bank of England notes. A few were made and sold by dealers for profit and bore the names of spurious firms.

As you can see, these coins give a vivid impression of the thriving, though somewhat grim, pattern of industry between 1808 and 1817. Clearly portrayed on them are the “dark satanic mills”—the rolling mills, textile mills, furnaces, forges, pumping engines and so forth that were beginning to make England an industrial power without rival in the world. Only the workhouse tokens, issued by the “Overseers of the Poor,” remind one forcibly of the price that society was paying for this industrial ascendancy: inhumanly long working hours, miserably low wages, and what we now regard as a complete lack of social justice.

At this distance it is all very shocking. But one has to realise that England really was in the throes of a revolution. Instead of being an agricultural country, exporting corn and wool, it was becoming a country of engineers, iron-works, coal mines, factories and chemical works, and for many people the process was a painful one. It is hard to believe now that as a matter of course children from five years old upwards were liable to be hired out by the workhouse or by their parents to work in factories or

1. Cartwheel 2d., 1797. The “Cartwheel” twopenny piece is one of the world's most celebrated coins. It was minted by Matthew Boulton at the Soho Factory, Birmingham. Weighing exactly two ounces, it came in handy as a weight. For this reason a fair number escaped the melting pot when the price of copper doubled within a few years. Even so, it is rare to come across one in mint condition, such as this coin

2 and 3. Norwich 2d. token and Lichfield 2d. token. Although most token coins were for one penny, a few rare twopenny tokens were struck. The “bombazine” of the Norwich coin is a twilled fabric of silk and wool

4 and 13. Workhouse tokens. Large numbers of these workhouse tokens were issued in 1812 by Birmingham, Sheffield and Halesowen. On the reverse side of these coins are the words “Payable at the Workhouse”—a forcible reminder of the harsh insecurity of those days. Tokens were declared illegal by Parliament in 1817, but the Act expressly allowed workhouse tokens to circulate until 1823

5. British Copper Company 1d., 1812. This company was established in 1807 by a Mr. Jones of Lambeth. It owned a smelting works at Landore and rolling mills at Walthamstow, and copper ingots were brought in seagoing barges direct to the rolling mills. Landore Works is now part of the Imperial Aluminium Company, an associated company of ICI. This coin is very rare

6. Stockton Penny, 1813. This is the old toll bridge across the River Tees linking South Durham with the Cleveland district of Yorkshire. Christopher and Jennett were the first firm of printers and booksellers in Stockton-on-Tees. Their shop was in the High Street. The firm was so incensed at the Bank of England's failure to provide adequate small change that they printed a protest pamphlet. Under the pseudonym “A Briton” they urged the Government to withdraw its support of the Bank





7



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7. Cornish Penny, 1811. This coin depicts a pumping station at a Cornish tin mine

8. Bilston Penny, 1811. Blast furnaces in the "Black Country" of the Midlands are here depicted. This token was issued by Samuel Fereday, one of the great ironmasters

9. Barnsley Penny. This token from the woollen district of the West Riding shows a weaver at a loom. Work at these looms may have been arduous and the hours may have been long, but this did not prevent the textile workers of Yorkshire violently resisting the introduction of the new machinery, fearing unemployment

10. Sheffield Penny, 1813. This portrays an iron foundry and its products—cannon and cannonballs—for the British Navy in the Napoleonic wars

11. Taunton Penny. A blacksmith at work at his forge. Fittings for ships—chains, anchors and copper nails—were made in large quantities in Somerset

12. Hull Penny, 1812. These lead works were owned by the Picard family. It can readily be imagined how unhealthy were long hours of work in such surroundings

coal mines. The hours of work were anything from 12 to 14 a day, with an hour off for dinner, six days a week.

By modern standards, conditions in the mines and factories were appalling. Children in cotton mills worked in a temperature of 85°, and there was so much dust that they could not see across the room. In the coal mines their job was to sit in the dark all day and open the trapdoors for ventilation, or to drag the coal trucks along to the pit's mouth. It was not until 1819 that children under 9 were banned from cotton factories, and not until 1842 that employment of children in mines was regulated.

For adults, life was little better. Factory employers regarded long hours as good for the soul, and as a way of keeping the workers out of the kind of revolutionary mischief that was disturbing the rest of Europe. People who worked at home—for machinery had not yet entirely replaced hand-work—were forced to work even harder to compete with the machines. In the mines, accidents and explosions were frequent. The men had no means of negotiating with their employers, for trade unions were prohibited by law. A few local ones existed, disguised as friendly societies, but being local had no power.

To make matters worse, the war with the French and a succession of bad harvests had driven the price of corn up to unprecedented heights. A political cartoon of 1795 (a little before the time of these industrial tokens) shows a butcher offering a working man a leg of lamb he cannot afford in place of the bread he cannot afford. Pinned to the butcher's block are lists of the prices of provisions and of current wages. This is how they read:

Provisions		Wages	
Mutton	.. 10d. per lb.	Carpenters	12s. per week
Lamb	.. 11d. per lb.	Shoemakers	10s. per week
Veal	.. 11½d. per lb.	Bakers	.. 9s. per week
Beef	.. 12d. per lb.	Gardeners	8s. per week
Small beer	.. 2d. per quart	Smiths	.. 8s. per week
Bread	.. 12d. per quartern loaf	Husbandmen	7s. per week



A political cartoon of 1795 showing a butcher offering a workman meat he can't afford in place of the bread he can't afford

Factory workers were probably a little better off, but wages were still fixed on the assumption that the wife and children would support themselves. If the wife and children were unable to work the Poor Law had to step in, and pretty cold comfort it provided. Some men had to spend their token coins at shops owned by the companies that employed them. They could be overcharged with impunity, and if they ran into debt found themselves in the position of having mortgaged themselves for life to an employer. This was one of the iniquities that later led to the passing of the Truck Act, which stipulated that workers must be paid in coin of the realm—a safeguard that is still in force today.

Despite the impressive designs on the token coins, England was far from completely industrialised. Ma-

chinery was still very expensive, and many of the steam engines of the new steam age were temperamental. Sometimes the cylinders were more than an eighth of an inch wider at one end than at the other, and had to be packed with chewed paper to stop the steam escaping. When a steam engine was installed at a factory or mine, the manufacturer's foreman often had to live with it for a month or more—"easing her here and screwing her up there," as one contemporary account puts it—before it would work.

The trouble was that all machinery had to be made by hand and there was a dearth of engineers skilful enough for the job. It was another 15–20 years before machines to make machines were invented, making it possible to turn out uniformly accurate parts quite easily. It was about this time that the chemical industry as we know it was born. To keep pace with the new cotton machinery, means had to be found of bleaching and dyeing the cloth quickly and efficiently. The development of chlorine and a spate of dyestuffs inventions was the result.

In 1816 a great issue of coinage was made by the Government and copper tokens became illegal. The era of individual coinage had come to an end. But the revolution of which it was a symptom had a long time to run—some people would say, in fact, that it is still with us today.

A Christmas Fiver

By J. S. P. Agg Large

THERE it was—clearly set forth in black and white in the morning paper. There were only five shopping days till Christmas, and as yet Jenny had not so much as bought a single cracker.

"Darling," she said.

"Well?" He was obviously annoyed at being interrupted in his reading of the football columns.

"Be careful, darling, do look what you're doing. The paper's going in the marmalade." Then, taking advantage of her husband's peering out from behind the paper, she said: "Look here, Bill, I'm afraid I'll have to go into Westhampton."

"Go right ahead," said Bill casually, returning to the latest news of the Arsenal line-up. "I'll pay for your lunch at the Brown Cow."

"No, you don't understand, darling, I'll need some money. There's all the Christmas shopping to be done."

"I thought we were going to economise this year." Then, after a moment, "Okay, dear, I'll give you two pounds," he said in a condescending manner.

"But darling, that won't even pay the grocer's bill," said Jenny, with a look of despair on her pretty face. Another pause followed, broken this time by a low whistle from Bill.

"Phew! How d'you like that, £35,000!" he retorted.

"But what on earth will I want all that for, darling?" asked Jenny with surprise.

"No, no, darling. That's what Portsmouth got for Jimmy Smith's transfer fee," explained Bill.

Jenny sank back behind the tea-cosy with an exasperated sigh. It did the trick, for Bill dropped the paper into the mustard, got out a five pound note, smacked it down on the table, gave her a kiss and made for his hat and coat.

Jenny never caught the train into Westhampton unless she absolutely had to. It was one of those

stupid little trains with a long, tall funnel, which tugged ridiculously through the fields, jolting and tossing like an old-fashioned chariot. The journey was, moreover, excessively dull. The twenty-two miles between Milkwhistle Halt and Westhampton were composed entirely of sad fields and tall hedges with an occasional grey haystack and bleak farmhouse lying in the shallow valleys.

There was nothing to entertain Jenny inside the carriage. Her only travelling companion was an old woman with long thick hair reaching down to her shoulders, which were visible through the moth holes in her coat. She made no reply to Jenny's comment about the weather, but fixed her instead with a long evil stare.

After a while Jenny grew tired of her crossword puzzle and fell asleep. She dreamed distractedly that she was at the home of the old woman opposite, a tumbledown cottage full of cats. She noticed especially that they were all jet black. The old woman got her water from the ditch outside and her firewood from the dense evergreen forest behind the cottage. She cultivated herbs and cut up toads, with which she produced weird cures. Jenny dreamed that she had been lured into the hag's back room and that she was being slowly hypnotised by the witch waving her long, bony fingers at her.

Suddenly she awoke with a start and gazed sleepily out of the window at the bare trees and telephone wires dancing up and down as the train went along. She counted the number of cows standing up and lying down to see if they forecast rain. She decided it was, and opened her handbag to see if she had remembered her scarf.

All of a sudden she realised that her five pound note was missing. Frantically she emptied the bag's contents on to the seat. There was a mirror, a powder puff, a lipstick, a bus ticket and a few coppers, but no



"... her only travelling companion was an old woman with long thick hair reaching down to her shoulders"

five pound note. In desperation she fumbled through her coat pockets, ripping the lining as she did so. All to no avail. It had gone.

Then a thought struck her. She gazed at the old woman opposite. It was she who had fallen asleep now. Jenny noticed how the corners of her mouth curled upwards into a horrible smirk. Silently she rose from her seat and walked on tiptoe across the compartment to where the old woman was sleeping. She could feel the warm, clammy breath as she looked down upon the coarse black hair which curled like worms all over the old woman's head. She stared at the evil eyes which were tightly closed, and the long, thin nose with an enormous wart on the end of it.

Very quietly she pulled apart the strings of the old woman's ancient leather bag. Even as she did so she thought she could feel the evil eyes boring right into her and hear the sharp intake of the witch's breath.

Jenny rummaged through the old woman's bag, found some fir cones and an old woollen shawl, until there, at the bottom, she could feel a piece of paper. She pulled it up. It was a five pound note.

Jenny put it into her pocket, replaced the bag and returned to her seat. Ten minutes later the train chugged into Westhampton station and the old woman woke up. She eyed Jenny with renewed interest.

"You goin' shoppin', missy?" she enquired in her coarse, croaky voice.

"As a matter of fact, I am," replied Jenny, trying to keep herself from stammering.

"Shouldn't if I was you, missy," said the old woman, "You go 'ome. Money is the root of all evil. You just remember that, missy."

A few minutes later, Jenny was out of the train and mingling with the throng of Christmas shoppers pushing their way through the overcrowded streets.

When Jenny got home that evening she found that Bill had got back from the office before her. She went up to him, kissed him twice on the end of his nose and sat down in an armchair.

"Well, Bill darling, how's the stuffy old office?" she enquired happily.

"Fine," replied Bill indifferently. "Do you have stocks and shares in any turkey farms by any chance?" asked Jenny. "Because if you do you're on to a good thing. I've ordered the biggest turkey I've ever seen for our Christmas dinner."

"You're sure it wasn't a rhinoceros?" asked Bill sarcastically, and added in a more sober tone: "For a poor and penniless maiden you're certainly very cheerful."

"And what might you mean by that?" asked Jenny.

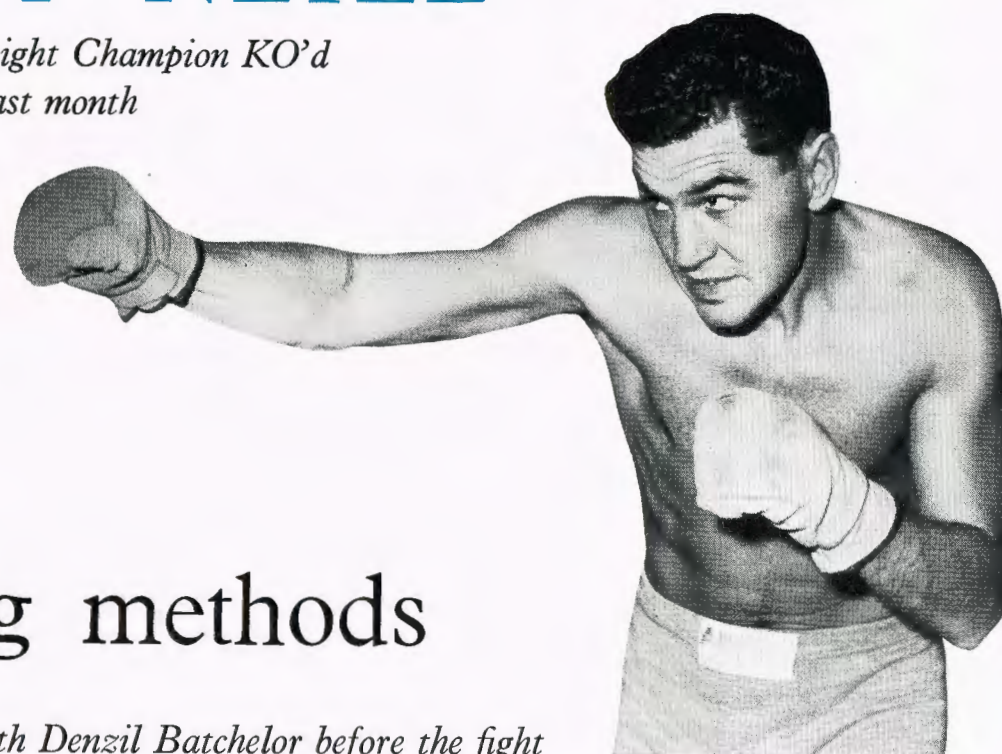
"Go and look in the dining-room," returned Bill, reaching for the sports paper. And there on the dining-room table lay the five pound note.

BOBBY NEILL

Former Featherweight Champion KO'd
by Terry Spinks last month

hits out at training methods

in an interview with Denzil Batchelor before the fight



Are British trainers moving with the times? Should they not raise their sights and study strategy more deeply? These criticisms come from Bobby Neill, former British featherweight champion—the boxer who spent two years in hospital with a smashed left thigh, still has one leg longer than the other, and has now had his last fight.

DENZIL BATCHELOR: Bobby Neill, I want you to tell us all about your career in boxing because I think it's the most inspiring life story of any man of championship class in any sport. Would you begin with the simple facts—age, record, and so on?
Bobby Neill: Well, I'm 27. I come from Edinburgh, one of three sons of a man who owns a small printing business. None of my family boxed. I first put on a pair of boxing gloves at 16—and I was lucky enough to become Scottish amateur featherweight champion before I was 17.

Batchelor: What made you begin?

Neill: I was keen on all sport. At Trinity College, Edinburgh, I was captain of cricket and rugby, and I

was good enough at soccer to be offered a trial for Wolverhampton Wanderers.

Batchelor: But you settled for boxing. Why was that?

Neill: I had an ambition. I wanted to be world's champion. Well, life cuts our ambitions down to size. I haven't been world's champion, but I have been British champion—that's not so bad.

Batchelor: Yes—you turned professional at 21, I think. But before that—when you were 17?

Neill: I had my first accident. I was leaving work in Edinburgh on my bicycle when a motor cyclist ran into me. My left thigh was smashed. I was in hospital for two years, on my back in bed for a year and a half. When I came out the doctors were doubtful

about my ever being mobile again, and were quite sure I'd never be able to run or take part in active sports.

Batchelor: I believe your left leg was lengthened by the treatment you got?

Neill: Yes, it's actually three-quarters of an inch longer than the right.

Batchelor: But your ambition remained undamaged. You went back to boxing. As an amateur you beat an Empire champion and a British champion. What made you quit the amateur ranks?

Neill: An atrocious decision against me in the British Championships.

Batchelor: So you became a professional six years ago. Since then you've fought 34 fights, won 29 and lost five. And I think you've stopped or knocked out all but three of the men you've beaten. But we haven't got you as far as your championship yet. Before you beat Charlie Hill for the title a couple of years back, you had your second accident.

Neill: Yes, I was driving back from Edinburgh after a fight, and I had a crash with a bus. My ribs were cracked and my left knee was broken. I was a crock again for a year—that's three years out of the eleven since I first took to boxing—and I'm left at, I suppose, about 85% of my physical potential. The Board of Control made me fight five qualifying contests before I was accepted again as challenger for the title. I won them all on knock-outs. Then in my next fight, against the Belgian champion, I had my jaw broken in the first round.

Batchelor: I remember that contest. You fought for five rounds with a broken jaw, then knocked your man out in the sixth. And after that you beat Charlie Hill for the title. Then—last year—you fought for the World's Championship against Davey Moore and were beaten in one round. How did that come about?

Neill: Well, I'm not excusing myself, but the way of it was this. We boxers have what we call a "cold period" at the beginning of a fight, when we're not adjusted, as it were, to mopping up punishment. That was when it happened. He caught me with a right hook, and down I went. I was down five times and—it seems extraordinary, but it's true—I was fully conscious and on the way to recovery only after that fifth knock-down—and then the referee stopped the fight. Moore told me I'd

hurt him with a left hook and he realised he had to do something—quick—or he'd have ended up the way I did. Well, it's always possible that that sudden ending saved me from a worse hiding that might have finished my career and perhaps left its mark on me for life.

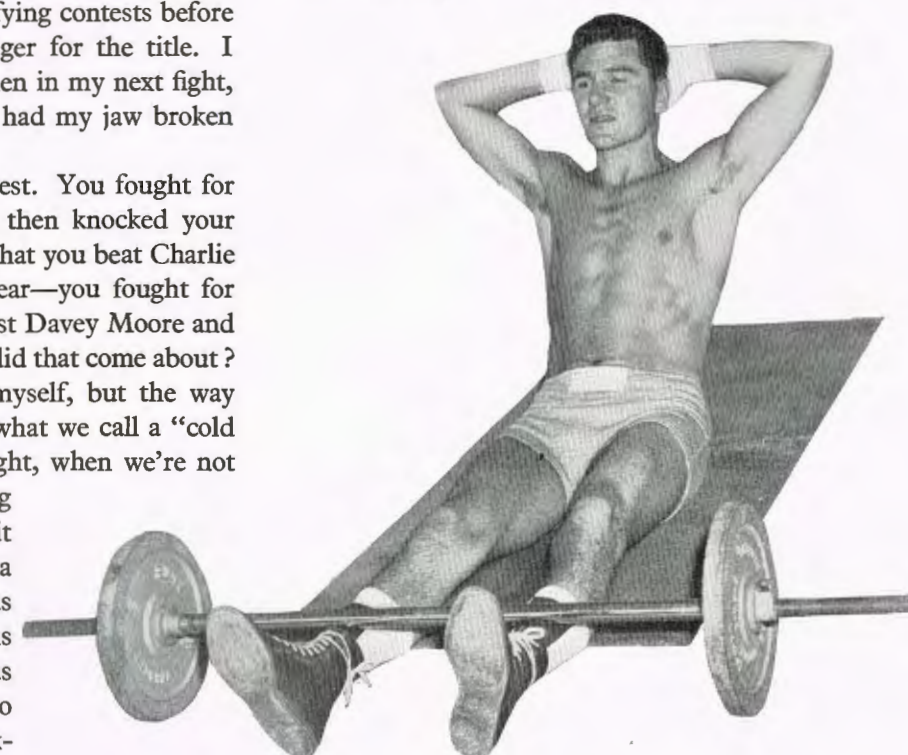
Batchelor: Then came the fight this year with Terry Spinks which the referee stopped when you had a cut eye. All the boxing writers said you were unlucky, because it wasn't a bad cut—there was just a lot of blood. When that was sponged away your eye was as right as rain, and you could have gone on. Is that the way you saw it?

Neill: Yes, it is. I was just getting on top and I'm sure I should have won. I protested to the Board of Control, and as a result the return match was fixed for a purse of £5000—winner take all—on 22nd November. Well, you know what happened then.

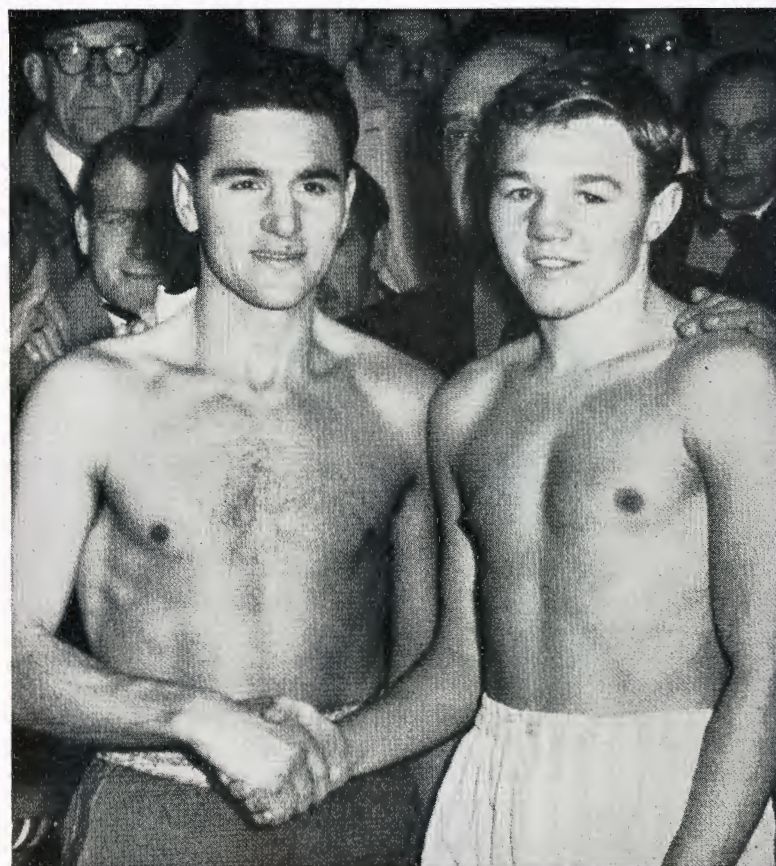
Batchelor: So that's the career story. Now for your views on the game. Why have you kept at it?

Neill: We've a boxing saying: The amateur asks "Who am I boxing?" The professional asks "What am I getting?"

Batchelor: That certainly puts it in a nutshell. Now, here's a thing that puzzles me. Why has British boxing so terribly deteriorated since I first knew it forty years ago?



Special weight-lifting exercises to strengthen the leg muscles were regular features of Bobby Neill's training



Bobby Neill (left) and Terry Spinks weigh in at Joe Bloom's gymnasium in readiness for their title fight at Wembley

Neill: One of the reasons is our training methods—or lack of them. British trainers are *hopelessly* obsolete. They're only concerned with *fitness*. Well, an athletic young man should be fit anyway. The trainer's job should be to plan strategy and tactics—he never gives them a thought and generally knows nothing about boxing.

Batchelor: All he does is to grind away at fitness—generally succeeding in turning it into staleness? Whereas, say, American trainers and managers are different?

Neill: They *really* know their stuff. When Willie Pastrano was over here I was suffering from my injured leg. I went over with a tape recorder to talk to Willie's "handler." He talked—impromptu—for fifteen minutes and gave me the most wonderful advice I ever listened to. I couldn't have got it from any Briton.

Batchelor: All right. You think our trainers are inadequate and obsolete. What about managers?

Neill: The advice I'd give to a young boy of intelligence and boxing ability set on becoming a professional today is—be your own manager.

Batchelor: I see. There's such a shortage of material that promoters would give him all the work he wanted. But would you advise a young man of intelligence and boxing ability to become a professional at all?

Neill: I certainly would not. I agree with Dr. Summerskill about professional boxing, but I strongly disagree with her about the amateur game.

Batchelor: You approve of that?

Neill: I certainly do. It's an absolutely necessary outlet for a young man's aggressive instincts. Women haven't a clue about these things. They don't climb Mount Everest, and consequently they can't understand why men feel it must be done.

Batchelor: Now while we're on the subject of amateur boxing (which we almost are), is it really a good preparation for the professional game?

Neill: In this country it's regarded as the key to the front door. That's why British amateurs, by and large, practise a style which will be acceptable when and if they turn professional. In Russia, where there are no professionals, they've invented a completely new style, the perfect style to suit conditions of three three-minute round

amateur contests. They have no futile, time-wasting left leads there. They sling punches from every angle non-stop from the first bell to the last.

Batchelor: Well, Bobby Neill, now I feel I really know what makes you tick. All that remains is to ask a question or two about the Bobby Neill outside the ring. The first time I met you I remember asking what you did in your spare time, and you replied that you read. I asked superciliously: "Space fiction or comics?" And you said: "Well, I've just finished *Madame Bovary* and I'm now starting on a course of Dostoevski." Well, what are you reading now?

Neill: Because of my environment I haven't done much reading since. But now I'm starting again I'm reading Voltaire on religion.

Batchelor: I believe I'm right in thinking you're also interested in painting?

Neill: That's a claim that would make me sound a little pompous. I love colour and imagination in pictures. One of my great delights this year has been a visit to the Picasso show.

Batchelor: When you retire, what then?

Neill: I am still thinking it out. I'd like to retain my connection with boxing, perhaps by writing or broadcasting about it. And I have wondered whether it would be a good plan to start a *smorgasbrod* restaurant

in conjunction with a shop selling Swedish glass. Or perhaps a genuine peasant basement Italian restaurant, as different from the tartyed-up West End Italian eating places as I could make it.

Batchelor: Good luck, whichever it is.



Bobby Neill (right) and Terry Spinks in a clinch. Spinks retained his British Featherweight title by knocking out Neill in the 14th round. Neill later had an emergency operation in Wembley Hospital, and the report as we go to press is that he is progressing favourably



"Marcus"

Photo by Evelyn Harrington (Southern Region)